



Backflow Assembly Field Test Procedures Using Three-Valve & Five-Valve Test Kits

TEST PROCEDURE USING A (3) VALVE DIFFERENTIAL GAUGE

REDUCED PRESSURE BACKFLOW PREVENTER

TEST SET UP

Notify customer water will be off, inspect device for leaks, and verify the make, model, & serial number.

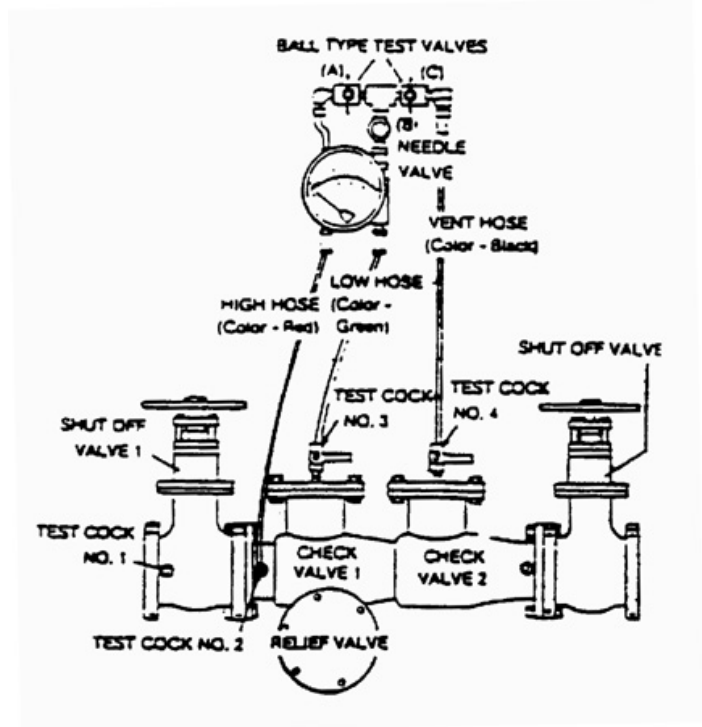
Flush test cocks in order (4-1-2-3), without making the relief valve open, then install brass fittings.

Close valves "A", "B", "C", on test kit and close the # 2 shut-off valve.

Connect high hose to test cock # 2, and low hose to test cock # 3.

Slowly open test cock # 3, then open vent "C" valve and low "B" valve. This will bleed air from low side of gauge. Slowly open test cock # 2, then open high "A" valve. This will bleed air from high side of gauge. Close valve "A", then valve "B", then valve "C".

Observe this **apparent** differential pressure for check valve # 1, this value must be at least 5.0 PSI or greater.



TEST NO. 1

Purpose: To test check valve # 2 against back pressure.

Connect the vent "C" hose to test cock # 4. Slowly open the high "A" and vent "C" valves and keep the low "B" closed. Open test cock # 4.

Gauge may decrease slightly due to disc compression. If pressure differential continues to decrease until the vent opens, then check valve # 2 is reported as leaking.

TEST NO. 2

Purpose: To test shut-off valve # 2 for tightness.

After passing test No. 1 continue to test No. 2 by closing test cock # 2. The indicated pressure differential will decrease slightly. If pressure differential continues to decrease (approaching zero) the No. 2 shut-off valve is reported to be leaking

TEST NO. 3

Purpose: To test check valve # 1 for tightness.

Close high "A" valve and open test cock # 2. Close test cock # 4. Disconnect vent hose at test cock # 4. Open low valve "B", this will bleed air from low side of gauge, then closing valve "B" restores the system to a normal static condition.

Observe the pressure differential gauge, this value must be at least 5.0 PSI or greater. Record this value for check valve # 1 on the backflow test report form.

TEST NO. 4

Purpose: To test operation of the differential pressure relief valve.

The pressure differential relief valve must operate to maintain the "zone" between the two check valves at least 2 psi less than supply pressure. Close vent "C" valve. Open the high "A" valve. Slowly open the low "B" valve no more than 1/4 turn. Hold the valve at this position and observe the gauge reading at the first moment the first discharge is noted from the relief valve. Record this as the opening differential pressure of the relief valve on the test report form.

On the back page is a differential pressure test for check valve # 2. Check valve # 2 must be at least 1.0 psi or greater.

DIFFERENTIAL PRESSURE TEST ON CHECK VALVE # 2

Check valve # 2 must be at least 1.0 psi or greater

Test # 5 is a required test. In addition to test # 1, which is a back pressure test on check valve # 2, you must perform this differential pressure test to confirm the true integrity of check valve # 2.

TEST NO. 5

Purpose: To do a differential pressure test instead of a back pressure test on check valve # 2.

After completing test No. 4 close test cock # 2, then close test cock # 3. Close valves "A", "B", and "C" on test kit.

Move low hose "B" to test cock # 4, then move high hose "A" to test cock # 3.

Slowly open test cock # 4, then open vent "C" valve and low "B" valve. This will bleed air from low side of gauge.

Slowly open test cock # 3, then open high "A" valve. This will bleed air from high side of gauge. Close valve "A", then "B", then "C".

Observe the differential pressure gauge, this value must be at least **1.0 psi or greater**. Record this value for check valve # 2 on the backflow test report form.

End of test. Make sure all test cocks are closed. Remove hoses and fittings. Slowly open shut-off valve # 2 to restore water supply to the customer.

DIFFERENTIAL PRESSURE TEST USING A (3) VALVE DIFFERENTIAL GAUGE

DOUBLE CHECK VALVE ASSEMBLY

Performed with the first shut-off valve open

This test is performed with the DIFFERENTIAL PRESSURE GAUGE test kit. As you will recall from the R.P. test, the differential pressure gauge simply measures the pressure drop across the check valve. This pressure drop is normally the same as the strength of the check valve spring. In using the differential pressure gauge to test the double check valve assembly, a minimum of 1.0 PSID is required for each check valve in order for that check valve to pass the test. Such a small reading is often difficult to read on most test kits. This is one of the drawbacks of this test. However, since the first shut-off valve is left in the open position for this test, it is possible to use this test when the first shut-off valve is leaking badly.

TEST PROCEDURE

PREP WORK:

- 1) Notify customer that the water service will be off. Identify the make, model, and serial number on the backflow device. Inspect that this is an approved assembly: 2-check valves, 2-shutoff valves, 4-test cocks. Observe the area to make sure there are no leaks.
- 2) Flush test cocks (1,2,3,4) then close all test cocks.
- 3) Install brass fittings in the test cocks.
- 4) Close shut-off valve # 2.

TEST CHECK VALVE # 1

- 1) Close all valves on test kit.
- 2) Connect the high side hose to test cock # 2, and the low side hose to test cock # 3. Open test cock # 2 and test cock # 3.
- 3) Open vent valve "C" and high "A" on the test kit to bleed the air from the high side of the kit. Close high "A" valve and then open low "B" valve to bleed the low side. Close low "B" valve.
- 4) Record the gauge reading. **It must be a minimum of 1.0 PSID in order to pass.** Close test cock # 2 and test cock # 3.

TEST CHECK VALVE # 2

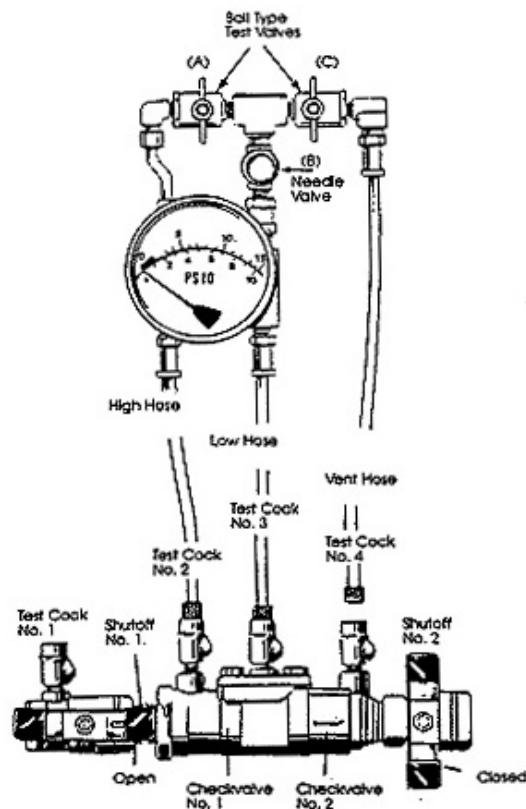
- 1) Move the high side hose to test cock # 3 and the low side hose to test cock # 4. Open test cock # 3 and test cock # 4.
- 2) Open vent "C" valve. Then open high "A" and bleed air from the high side of kit. Close high "A" valve, and then open low "B" valve and bleed the low side of kit. Close low "B" valve.
- 3) Record the gauge reading. **It must be a minimum of 1.0 PSID in order to pass.** Close test cock # 3 and test cock # 4. Remove hoses and test kit. Slowly open shut-off valve # 2 in order to restore water flow to the facility (placing the DCVA back into service.)

TEST FOR LEAKING # 2 SHUT-OFF VALVE

AS PREVIOUSLY MENTIONED, THE ABOVE TEST IS NOT ACCURATE WHEN THE SECOND SHUT-OFF VALVE IS LEAKING. THE FOLLOWING TEST WILL EXPOSE A LEAKING SHUT-OFF VALVE.

- 1) Both shut off valves should be open. Make sure all valves on test kit are closed. Connect the high "A" hose to test cock # 2 and the low "B" hose to test cock # 3. Open test cock # 2 and test cock # 3.
- 2) Open the high "A" valve and vent "C" valve to bleed air from high side of gauge. Open low "B" valve to bleed air from low side of gauge. Close valves "A", "B", and "C" on test kit.
- 3) Connect the vent "C" hose to test cock # 4. Open test cock # 4.
- 4) Close shut off valve # 2. The differential gauge needle should read at least **1.0 PSID** in order to pass.
- 5) Open the high "A" valve and vent "C" valve. This will put back pressure on check valve # 2.
- 6) Close test cock # 2.

IF GAUGE IS STEADY THEN SHUT-OFF VALVE # 2 IS HOLDING TIGHT. HOWEVER, IF GAUGE DROPS TO ZERO PSID THEN SHUT-OFF VALVE # 2 IS LEAKING. IF THE GAUGE RISES THEN THE SHUT-OFF VALVE IS STILL LEAKING, BUT IS UNDER BACK PRESSURE FROM THE FACILITY.



THESE DIRECTIONS ARE FOR THE THREE (3) VALVE GAUGE
DOUBLE CHECK VALVE TEST
DIRECTION OF FLOW

IMPORTANT: SINCE THE GAUGE AND LOW HOSE MUST BE HELD AT THE SAME LEVEL AS THE DCVA AND SINCE MANY SMALL SIZE DCVA'S ARE INSTALLED IN METER BOXES WITH VERY CLOSE SIDE CLEARANCES, THIS TEST MAY NOT BE ACCEPTABLE IN SUCH INSTANCES. IF SO, YOU MAY PREFER THE DIFFERENTIAL PRESSURE TEST WHERE YOU USE THE DIFFERENTIAL GAUGE AND TWO HOSE TEST.

TEST PROCEDURE

Test Check Valve # 1

1. Close all valves on test kit.
2. Attach high hose of gauge to test cock # 2.
3. Slowly open test cock # 2.
4. Open high "A" and vent "C" on test kit and bleed air from kit.
5. Close vent "C" valve on gauge after air is expelled.
6. Close shut-off valve # 2 then # 1 (With both shut-off valves now closed some pressure is trapped inside of the DCVA.)
7. Open test cock # 3 (Test cock # 2 should still be open.)
8. At this point, the gauge needle **must not drop below 1.0 psi**.
9. If the gauge needle holds at **1.0 psi** or greater then the check valve is holding tight.

Test check valve # 2

1. Close test cocks # 2 and # 3 on the DCVA and close high "A" and vent "C" on the test kit.
2. Move the high hose from test cock # 2 to test cock # 3.
3. Open shut-off valve # 1 on the DCVA.
4. Slowly open test cock # 3 on DCVA.
5. Open high "A" and vent "C" valves to bleed air from the kit.
6. Close vent "C" valve on gauge after air is expelled.
7. Close shut-off valve # 1 on the DCVA. (Pressure now trapped inside of the DCVA.)
8. Open test cock # 4. (Test cock # 3 should still be open.)
9. If the gauge needle holds at **1.0 psi** or greater then the check valve is holding tight.

- IN CLOSING -

1. Close all test cocks on DCVA.
2. Open customer hose bibb for flushing if possible.
3. Slowly open both shut-off valves on DCVA.
4. Allow water to flow for a minute from the open hose bibb.
5. Close hose bibb.
6. Check with customer, flush a toilet, and/or run some water within the facility if possible before leaving.

ALL VALVES ON THE TEST KIT SHOULD BE OPENED AND THE KIT ALLOWED TO DRAIN PRIOR TO STORAGE. THIS IS ESPECIALLY IMPORTANT DURING COLD WEATHER DUE TO THE DANGER OF FREEZING.

NOTE THE ABOVE TESTING PROCEDURE IS CONDUCTED WITH THE # 1 SHUT-OFF VALVE IN THE CLOSED POSITION. THIS MEANS THAT THE # 1 SHUT-OFF VALVE MUST NOT LEAK. WHILE THE #1 SHUT-OFF VALVE IS CLOSED OPEN TEST COCK # 2 AND INSPECT FOR CONTINUOUS LEAKAGE. IF # 1 SHUT-OFF VALVE IS LEAKING THEN YOU CANNOT USE THIS TEST. HOWEVER, THE DIFFERENTIAL PRESSURE TEST WITH TWO HOSES CAN BE USED ON DCVA'S SINCE THE #1 SHUT-OFF STAYS OPEN FOR THE TEST.**

TEST PROCEDURE USING A (3) VALVE DIFFERENTIAL GAUGE

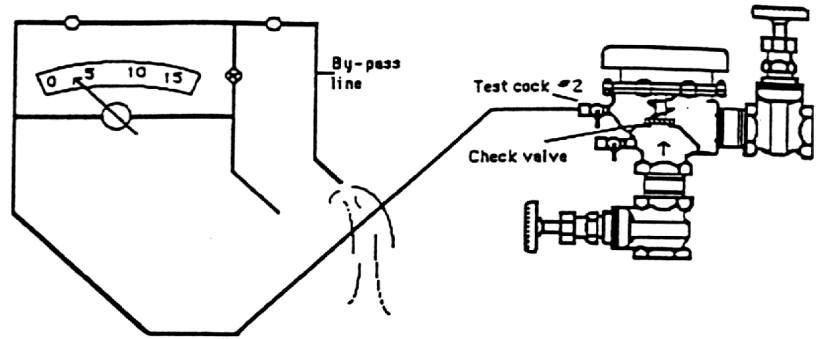
PRESSURE VACUUM BREAKER

TEST SET UP

Notify customer water will be off, inspect device for leaks, verify the make, model & serial number.

Flush test cocks and install brass fittings. **REMOVE CANOPY.**

Close valves "A", "B", and "C" on test kit, and close the # 2 shut-off valve.



TEST NO. 1

Purpose: To test the air inlet valve.

Attach the high "A" hose to test cock # 2. Open test cock # 2 very slowly. Open the high "A" valve and vent "C" valve to expel air from the gauge. Close the vent "C" valve. Close the # 1 shut-off valve. Pressure is now captured in the PVB.

The gauge diaphragm and low hose must be level with test cock # 2 and/or the area between the check valve and the air-inlet valve.

Very slowly open the vent "C" valve with your finger on top of the air-inlet valve. The air-inlet valve must open at least **1.0 psi or greater**. Record this value on the test report form.

Close high "A" valve and vent "C" valve.

TEST NO. 2

Purpose: To test the check valve

Close test cock # 2 and remove the high "A" hose from test cock # 2. Open shut-off valve # 1.

Attach high "A" hose to test cock # 1. Open test cock # 1 very slowly. Open high "A" valve and vent "C" valve to expel air from the gauge. Close the vent "C" valve. Close the # 1 shut-off valve. Pressure is now captured in the PVB.

Again: The gauge diaphragm and low hose must be level with test cock # 2 and/or the area between the check valve and the air-inlet valve.

Open test cock # 2. When water stops running out of test cock # 2, record this value on the test report form. This check valve must be at least **1.0 psi or greater**.

End of test. Make sure all test cocks are closed. Remove hose and fittings. Place canopy back on PVB. Open shut-off valve # 1 and then shut-off valve # 2.

A PVB must be installed 12" above all fixtures installed down stream and is not approved for back pressure. To verify the PVB is 12" above the highest open fixture or irrigation head, close the # 1 shut-off valve. Open test cock # 2, then open shut-off valve # 2. If water continues to run out of test cock # 2, there is back pressure on the PVB or it is below the highest fixture or irrigation head.

TEST PROCEDURE USING A (5) FIVE VALVE DIFFERENTIAL GAGE

REDUCED PRESSURE BACKFLOW PREVENTER

TEST SET UP

Notify customer water will be off, inspect device for leaks, and verify the make, model, & serial number.

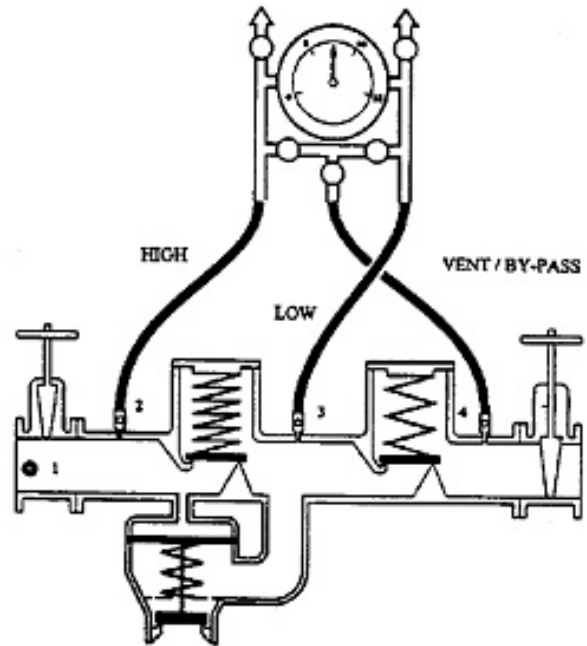
Flush test cocks in order (4-1-2-3), without making the relief valve open, then install brass fittings.

Close all 5 valves on test kit, and close the # 2 shut-off valve.

Connect high hose to test cock # 2, and low hose to test cock # 3.

Slowly open test cock # 3, then open low bleed valve.
Slowly open test cock # 2, then open high bleed valve.
Close high bleed valve, then close low bleed valve.

Observe this **apparent** differential pressure for check valve # 1, this value must be at least 5.0 PSI or greater.



TEST NO. 1

Purpose: To test check valve # 2 against back pressure.

Open the high control valve one full turn. Open vent "C" valve to bleed air. Close vent "c" valve. Connect the vent / by-pass hose to test cock #4. Open the vent / by-pass valve. Open test cock # 4.

Gage may decrease slightly due to disc compression. If pressure differential continues to decrease until the vent opens, then check valve # 2 is reported as leaking.

TEST NO. 2

Purpose: To test shut-off valve # 2 for tightness.

After passing test No. 1 continue to test No. 2 by closing test cock # 2. The indicated pressure differential will decrease slightly. If pressure differential continues to decrease (approaching zero) the No. 2 shut-off valve is reported to be leaking

TEST NO. 3

Purpose: To test check valve # 1 for tightness.

Close vent / by-pass valve. Close test cock #4 and remove vent / by-pass hose from test cock #4. Open test cock #2. Open low bleed valve to expel air from low side of gage, then open high bleed valve to expel air from high side of gage. Close high bleed valve, close low bleed valve. Observe the differential pressure gage, this value must be at least **5.0 PSI or greater**. Record this value for check valve # 1 on the backflow test report form.

TEST NO. 4

Purpose: To test operation of the differential pressure relief valve.

The pressure differential relief valve must operate to maintain the "zone" between the two check valves at least 2 psi less than supply pressure. The high control valve has been open since test # 1, so slowly open the low control valve no more than ¼ turn. Hold the valve at this position and observe the gage reading at the first moment the first discharge is noted from the relief valve. Record this as the opening differential pressure of the relief valve on the test report form.

On the back of this page is a differential pressure test for check valve # 2. Check valve # 2 must be at least 1.0 psi or greater.

DIFFERENTIAL PRESSURE TEST ON CHECK VALVE # 2
Check valve # 2 must be at least 1.0 psi or greater

Test # 5 is a required test. In addition to test # 1 which is a back pressure test on check valve # 2, you must perform this differential pressure test to confirm the true integrity of check valve # 2.

TEST NO. 5

Purpose: To do a differential pressure test instead of a back pressure test on check valve # 2.

After completing test No. 4 close test cock # 2, then close test cock # 3. Close all 5 valves on test kit.

Move low hose to test cock # 4, then move high hose to test cock # 3.

Slowly open test cock # 4, then open the low bleed valve.
Slowly open test cock # 3, then open the high bleed valve.
Close high bleed valve, then close low bleed valve.

Observe the differential pressure gage, this value must be at least **1.0 psi or greater**. Record this value for check valve # 2 on the backflow test report form.

End of test. Make sure all test cocks are closed. Remove hoses and fittings. Slowly open shut-off valve # 2 to restore water supply to the customer.

DIFFERENTIAL PRESSURE TEST USING A (5) VALVE DIFFERENTIAL GAGE

DOUBLE CHECK VALVE ASSEMBLY

Performed with the first shut-off valve open

This test is performed with the DIFFERENTIAL PRESSURE GAUGE test kit. As you will recall from the R.P. test, the differential pressure gauge simply measures the pressure drop across the check valve. This pressure drop is normally the same as the strength of the check valve spring. In using the differential pressure gauge to test the double check valve assembly, a minimum of 1.0 PSID is required for each check valve in order for that check valve to pass the test. Such a small reading is often difficult to read on most kits. This is one of the drawbacks of this test. However, since the first shut-off valve is left in the open position for this test, it is possible to use this test when the first shut-off valve is leaking badly.

TEST PROCEDURE

PREP WORK:

- 1) Notify customer that the water service will be off. Identify the make, model, and serial number on the backflow device. Inspect that this is an approved assembly: 2-check valves, 2-shut-off valves, 4-test cocks. Observe the area to make sure there are no leaks.
- 2) Flush test cocks (1,2,3,4) then close all test cocks.
- 3) Install brass fittings in the test cocks.
- 4) Close shut-off valve # 2.

TEST CHECK VALVE # 1

- 1) Close all valves on test kit.
- 2) Connect the high side hose to test cock # 2, and the low side hose to test cock # 3. Open test cock # 2 and test cock # 3.
- 3) Open the low bleed valve and then the high bleed valve. This will expel all air from gauge. Close high bleed valve, then low bleed valve.
- 4) Record the gauge reading. **It must be at least 1.0 PSID in order to pass.** Close test cock # 2 and # 3.

TEST CHECK VALVE # 2

- 1) Move the high hose to test cock # 3, and the low hose to test cock # 4. Open test cock # 3 and test cock # 4.
- 2) Open the low bleed valve and then the high bleed valve. This will expel all air from gauge. Close high bleed valve, then low bleed valve.
- 3) Record the gauge reading. **It must be at least 1.0 PSID in order to pass.** Close test cock # 3 and # 4. Remove hoses, brass fittings, and test kit. **Slowly** open shut-off valve # 2 in order to restore water flow to the facility (placing the DCVA back into service.)

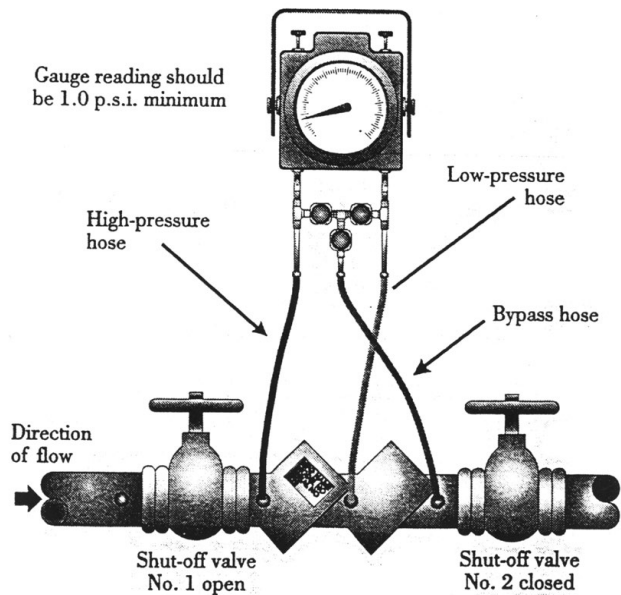
TEST FOR LEAKING # 2 SHUT-OFF VALVE

AS PREVIOUSLY MENTIONED, THE ABOVE TEST IS NOT ACCURATE WHEN THE SECOND SHUT-OFF VALVE IS LEAKING. THE FOLLOWING TEST WILL EXPOSE A LEAKING SHUT-OFF VALVE.

- 1) Both shut off valves should be open. Make sure all valves on test kit are closed. Connect the high side hose to test cock # 2 and the low side hose to test cock # 3. Open test cock # 2 and test cock # 3.
- 2) Open the low bleed valve, then the high bleed valve to expel all air out of gage. Close the high bleed valve, then the low bleed valve.
- 3) Open the high control valve on full turn, then open the vent / by pass valve to bleed air from kit. Close high control valve and vent / by pass valve.
- 4) Connect the vent / by pass hose to test cock # 4. Open test cock # 4
- 5) Close shut-off valve # 2 and the gauge should read at least **1.0 PSID** in order to pass.
- 6) Open the high control valve one full turn and then open the vent / by-pass valve. This will put back pressure on check valve # 2.
- 7) Close test cock # 2.

IF GAUGE IS STEADY THEN SHUT-OFF VALVE # 2 IS HOLDING TIGHT. HOWEVER, IF GAUGE DROPS TO ZERO PSID THEN SHUT-OFF VALVE # 2 IS LEAKING.

IF THE GAUGE RISES THEN THE # 2 SHUT-OFF VALVE IS STILL LEAKING, BUT IS UNDER BACK PRESSURE FROM THE FACILITY.



THESE DIRECTIONS ARE FOR THE FIVE (5) VALVE TEST KIT
DOUBLE CHECK VALVE TEST
DIRECTION OF FLOW

IMPORTANT: SINCE THE GAGE AND LOW HOSE MUST BE HELD AT THE SAME LEVEL AS THE DCVA AND SINCE MANY SMALL DCVA'S ARE INSTALLED IN METER BOXES WITH VERY CLOSE SIDE CLEARANCES, THIS TEST MAY NOT BE ACCEPTABLE IN SUCH INSTANCES. IF SO, YOU MAY SUBSTITUTE THE VERTICAL TUBE TEST. THE THEORY AND PRACTICE ARE SIMILAR ON THESE TWO TESTS.

TEST PROCEDURE

Test Check Valve # 1

1. Close all (5) valves on test kit.
2. Attach high hose of gage to test cock # 2.
3. Slowly open test cock # 2.
4. Open high bleed valve on test kit and bleed air from kit.
5. Close high bleed valve after air is expelled.
6. Close shut-off valve # 2 then # 1 (With both shut-off valves now closed pressure is trapped inside of the DCVA.)
7. Open test cock # 3 (Test cock # 2 should still be open.)
8. At this point, the gage needle **must not drop below 1.0 psi.**
9. If the gage needle holds at **1.0 psi** or greater then the check valve is holding tight.

Test check valve # 2

1. Close test cocks # 2 and # 3 on the DCVA and close the high bleed valve on the test kit.
2. Move the high hose from test cock # 2 to test cock # 3.
3. Open shut-off valve # 1.
4. Slowly open test cock # 3.
5. Open high bleed valve on test kit and bleed air from kit.
6. Close high bleed valve after air is expelled.
7. Close shut-off valve # 1. (Pressure is trapped inside of the DCVA.)
8. Open test cock # 4. (Test cock # 3 should still be open.)
9. If the gage needle holds at **1.0 psi** or greater then the check valve is holding tight.

-IN CLOSING-

1. Close all test cocks, remove hoses, and brass fittings.
2. Open customer hose bibb for flushing if possible.
3. Slowly open both shut-off valves on DCVA.
4. Allow water to flow for a minute from the open hose bibb.
5. Close hose bibb.
6. Check with customer, flush a toilet, and/or run some water within the facility if possible before leaving.

ALL VALVES ON THE TEST KIT SHOULD BE OPENED AND THE KIT ALLOWED TO DRAIN PRIOR TO STORAGE. THIS IS ESPECIALLY IMPORTANT DURING COLD WEATHER DUE TO THE DANGER OF FREEZING.

NOTE* THE ABOVE TESTING PROCEDURE IS CONDUCTED WITH THE #1 SHUT-OFF VALVE IN THE CLOSED POSITION. THIS MEANS THAT THE #1 SHUT-OFF VALVE MUST NOT LEAK. OPEN TEST COCK # 2 AND INSPECT FOR CONTINUOUS LEAKAGE. IF THE # 1 SHUT-OFF VALVE IS LEAKING THEN YOU CAN NOT USE THIS TEST. HOWEVER, THE VERTICAL TUBE OR DIFFERENTIAL PRESSURE TEST CAN BE USED ON DCVA'S WHERE SMALL LEAKAGE OCCURS PAST THE # 1 SHUT-OFF VALVE.**

TEST PROCEDURE USING A (5) VALVE DIFFERENTIAL GAGE

PRESSURE VACUUM BREAKER

TEST SET UP

Notify customer water will be off, inspect device for leaks, and verify the make, model & serial number.

Flush test cocks and install brass fittings.

REMOVE CANOPY.

Close all (5) valves on test kit, and close the # 2 shut-off valve.

TEST NO. 1

Purpose: To test the air inlet valve.

Attach the high hose to test cock # 2. Open test cock # 2 very slowly. Open the high bleed valve to expel air from gage. Close the high bleed valve. Close the # 1 shut-off valve. Pressure is now captured in the PVB.

The gage diaphragm and low hose must be level with test cock # 2 and/or the area between the check valve and the air-inlet valve.

Very slowly open the high bleed valve with your finger on top of the air-inlet valve. The air-inlet valve must open at least **1.0 psi or greater**. Record this value on the test report form.

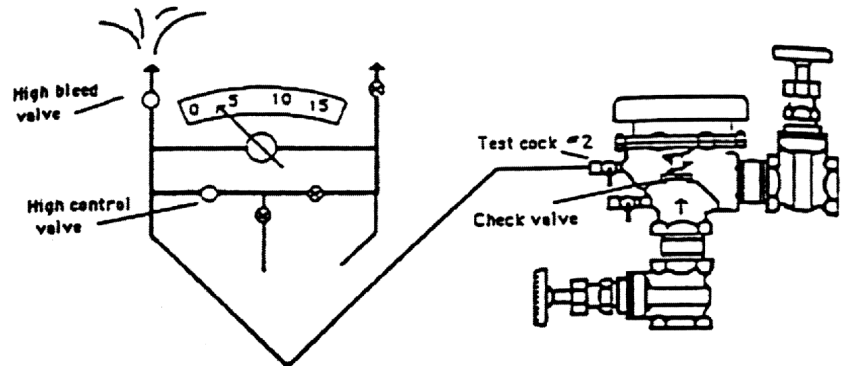
Close the high bleed valve.

TEST NO. 2

Purpose: To test the check valve

Close test cock # 2 and remove the high hose from test cock # 2. Open shut-off valve # 1.

Attach high hose to test cock # 1. Open test cock # 1 very slowly. Open high bleed valve to expel air from gage. Close the high bleed valve and close the # 1 shut-off valve. Pressure is now captured in the PVB.



Again: The gage diaphragm and low hose must be level with test cock # 2 and/or the area between the check valve and the air-inlet valve.

Open test cock # 2. When water stops running out of test cock # 2, record this value. This check valve must be at least **1.0 psi or greater**.

End of test. Make sure all test cocks are closed. Remove hose and fittings. Place canopy back on PVB. Open shut-off valve # 1 and then shut-off valve # 2.

A PVB must be installed 12" above all fixtures installed down stream and is not approved for back pressure. To verify the PVB is 12" above the highest open fixture or irrigation head, close the # 1 shut-off valve. Open test cock # 2, then open shut-off valve # 2. If water continues to run out of test cock # 2, there is back pressure on the PVB or it is below the highest fixture or irrigation head.